

**CALIFORNIA COASTAL COMMISSION**

45 FREMONT, SUITE 2000  
SAN FRANCISCO, CA 94105-2219  
VOICE AND TDD (415) 904-5200  
FAX (415) 904-5400



# Th4

Energy and Ocean Resources

Staff: JLL, SMH—SF

Staff Report: December 1, 2006

Hearing Date: December 14, 2006

## **STATUS REPORT ON SONGS MITIGATION PROGRAM**

Following is a brief status report for the mitigation projects required in Southern California Edison Company's (SCE) coastal development permit for the San Onofre Nuclear Generating Station (SONGS) Units 2 and 3 (permit no. 6-81-330, formerly 183-73). The Commission originally adopted the conditions in 1991 to mitigate the adverse impacts of the power plant on the marine environment. The 1991 conditions (Condition D) also require SCE to provide the funds necessary for Commission technical oversight and independent monitoring of the mitigation projects, to be carried out by independent contract scientists under the direction of the Executive Director. In 1993, the Commission added a requirement for the permittee to partially fund construction of an experimental fish hatchery. The Commission has since approved amendments to the conditions in April 1997, October 1998, and October 2005.

Implementation of the mitigation projects is the responsibility of SCE whereas the Commission is responsible for implementing its independent monitoring and technical oversight function. The Commission has operated under approved work programs and budgets since 1993. In December 2005, the Commission unanimously approved the work program and budget for calendar years 2006 and 2007.

Another aspect of the Commission's monitoring and oversight is periodic public review of the performance of the mitigation projects. The staff and contract scientists will be conducting the next public workshop on the wetland restoration and reef mitigation projects in the Spring of 2007. The date, time, location and agenda will be posted on the Commission's website.

## **WETLAND RESTORATION MITIGATION**

### *Mitigation Requirement*

Condition A of the permit requires the permittee to create or substantially restore a minimum of 150 acres of wetlands to mitigate for the reduction in the standing stocks of nearshore fishes caused by the operation of SONGS Units 2 and 3. In April 1997, the Commission revised Condition A to allow up to 35 acres enhancement credit for permanent, continuous tidal maintenance at San Dieguito Lagoon.

### *Wetland Restoration Planning and Environmental Review*

In June 1992, following an evaluation of eight sites, the Commission approved SCE's selected restoration site, the San Dieguito River Valley. In April 1997, the Commission reaffirmed its prior decision that San Dieguito River Valley is the restoration site that meets the minimum standards and best meets the objectives set forth in Condition A.

In November 1997 the Commission approved SCE's preliminary wetland restoration plan as largely conforming with the minimum standards and objectives stated in the permit. The CEQA/NEPA environmental review incorporated the mitigation project into the overall San Dieguito River Valley Regional Open Space Park project. The lead agencies for the CEQA and NEPA environmental review were the San Dieguito River Valley Regional Open Space Park Joint Powers Authority (JPA) and the U.S. Fish and Wildlife Service, respectively.

Following the review period on the January 2000 Draft EIR/S, the Final EIR/EIS was released in September 2000. On September 15, 2000, the JPA certified the EIR/EIS after public hearing. The EIR/EIS designated the Mixed Habitat plan as the environmentally preferred alternative.

Lawsuits challenging the adequacy of the Final EIR/EIS were filed by the Del Mar Sandy Lane Association and Citizens United to Save the Beach. On July 27, 2001, the San Diego Superior Court ruled that the EIR/EIS did not comply with CEQA and remanded the EIR/EIS back to the JPA for revisions. However, on August 4, 2003, the California Court of Appeals overturned the Superior Court's ruling and upheld the adequacy of the EIR/EIS.

Following the conclusion of the litigation, the USFWS issued its final Record of Decision on the Final EIR/EIS on November 28, 2003.

### *Steps in Implementing Wetland Restoration*

Upon completion of the wetland restoration project design and engineering plans, SCE and JPA submitted their Coastal Development Permit Application (#6-04-88) in August 2004. The Commission's contract scientists and staff reviewed the application and associated documents, requesting additional information where necessary. On October 12, 2005, the Commission approved the Final Restoration Plan and CDP #6-04-88, as conditioned, for the San Dieguito Wetland Restoration Project.

In approving the preliminary restoration plan in 1997, the Commission acknowledged and accepted that a small amount of existing wetland would be lost in implementing the overall wetland restoration project at San Dieguito. The Commission had determined that if the Final Plan involves any loss that such loss would be mitigated and an amendment to the SONGS permit would be considered to allow the restoration project to go forward in compliance with the SONGS permit conditions. Thus, on October 12, 2005, the Commission also approved an amendment to SONGS CDP #6-81-330-A4 to revise Standard 1.3.h of Condition A to allow the minimal loss of existing wetlands as "specifically authorized by the Coastal Commission in Coastal Development Permit No. 6-04-88 for the San Dieguito Wetland Restoration Project Final Restoration Plan."

At the same time, the long-standing obligation of the 22<sup>nd</sup> Agricultural District to provide for Least Tern nesting habitat as a requirement of its coastal development permit No. 6-84-525 was resolved with the inclusion of four new nesting sites in the Final Restoration Plan. On October 12, 2005, the Commission approved an amendment to CDP #6-84-525 to require the provision, maintenance and monitoring of the new Least Tern nesting habitat to be constructed as part of the San Dieguito Wetland Restoration Project.

On August 29, 2006, the Executive Director issued an emergency permit to the City of Del Mar for a one-time opening of the San Dieguito Lagoon inlet. The follow-up permit is scheduled for the Commission's December 2006 meeting and covers the potential need to open the mouth of the lagoon again until it is permanently opened through the Final Restoration Plan.

### *Wetland Restoration Condition Compliance*

The wetland restoration project at San Dieguito is now under way and is expected to take approximately three years to complete. Following the Commission's approval of CDP #6-84-88, SCE and JPA began preparing the final plans in compliance with the special conditions in CDP #6-04-88 that must be met prior to issuance of the permit, prior to commencement of construction, during construction, at the completion of construction, and on an on-going basis. Material submitted in compliance with the special conditions has been reviewed by the Executive Director and found to fulfill the requirements of certain of those conditions, as follows:

- On August 22, 2006, Commission staff issued the Notice of Acceptance for condition compliance required *prior to issuance of the permit* and issued CDP #6-04-88.
- On September 13, 2006, Commission staff issued the Notice of Acceptance for condition compliance required *prior to commencement of construction*; however, the Notice of Acceptance excluded authority to construct certain plan elements that require compliance with additional site-specific conditions (i.e., least tern nesting habitat, public trails, freshwater runoff treatment ponds, inlet dredging, use of North Beach staging area and beach restoration activities, river bend revetment, a disposal site, and a mitigation site).
- On October 2, 2006, Commission staff issued the Notice of Acceptance for condition compliance required *prior to commencement of construction of segments 1 through 3 of the Coast-to-Crest public trail* (from Jimmy Durante Boulevard along the northern edge of the river to I-5).
- On November 20, 2006, Commission staff issued the Notice of Acceptance for condition compliance required *prior to commencement of construction on disposal site DS32*.

Commission staff expects to issue a Notice of Acceptance for condition compliance required *prior to commencement of construction of the least tern nesting habitat areas* within the next few weeks.

### *Wetland Restoration Monitoring*

The SONGS permit establishes physical and biological performance standards that must be met by the restored wetland. As part of the Commission's technical oversight, monitoring and management responsibilities, the contract scientists conducted pre-restoration monitoring in San Dieguito Lagoon and in other southern California wetlands, including those that will be used as reference sites in post-restoration monitoring. Pre-restoration monitoring included the collection of physical and biological data on the wetland attributes to be monitored during post-restoration monitoring. These data were needed to develop sampling designs that can effectively determine whether the various performance standards have been met. The results of the pre-restoration monitoring studies are incorporated into the CCC Monitoring Plan for the SONGS Wetland Mitigation Program, approved as part of the Commission's approval of the coastal development permit for the wetland restoration project. An important goal of pre-restoration monitoring was to develop sampling designs that are cost-effective and minimize adverse impacts to wetland resources. Upon the completion of the wetland construction, restoration monitoring will be conducted for the full operating life of SONGS.

### *Wetland Construction Monitoring*

The SONGS permit also requires independent monitoring by Commission contract scientists during and immediately after each stage of construction to ensure that the restoration work is conducted according to approved plans. To accomplish this task, CCC contract scientists are working closely with project contractors, surveyors, biologists, and others retained by SCE involved with implementation of the Final Plan. CCC construction monitoring will be event driven, with the level of monitoring dependent on the timing and types of activity at the construction site. The level of activity of CCC monitoring will be highest during the initial coordination and planning phase, during the early stages of each construction phase (e.g., of each module), towards the end of each construction phase, and at the conclusion of construction. Spot checks coordinated with other monitors will be conducted during periods of more routine activity to minimize unnecessary duplication of oversight.

## **KELP REEF MITIGATION**

### *Mitigation Requirement*

Condition C of the permit requires construction of an artificial reef that consists of an experimental reef and a larger mitigation reef. The experimental reef must be a minimum of 16.8 acres and the mitigation reef must be of sufficient size to sustain 150 acres of medium to high density kelp bed community. The purpose of the experimental reef is to determine which combinations of substrate type and substrate coverage will most likely achieve the performance standards specified in the permit. The design of the mitigation reef will be contingent on the results of the experimental reef.

In April 1997, the Commission added the requirement for a payment of \$3.6 million to the State's Ocean Resource Enhancement and Hatchery Program (OREHP) to fund a mariculture /

marine fish hatchery to provide compensation for resources not replaced by the artificial mitigation reef. SCE has fully satisfied this requirement.

### *Planning and Construction of Experimental Reef*

Following the Commission's approval of the SONGS permit amendment in April 1997, SCE submitted a preliminary conceptual plan for the experimental reef in June 1997, which was approved by the Executive Director and forwarded to state and federal agencies for review. As lead agency, the State Lands Commission (SLC) determined that under the requirements of CEQA a Program Environmental Impact Report (PEIR) should be prepared to evaluate both the experimental reef and the subsequent full mitigation reef. SLC began the environmental review process in March 1998, and certified the final PEIR and issued the offshore lease for the experimental reef on June 14, 1999.

The Coastal Commission approved the coastal development permit for the experimental reef on July 15, 1999 (CDP #E-97-10). The final plan approved by the Coastal Commission was for an experimental artificial reef located off San Clemente, California that tested eight different reef designs that vary in substrate composition (quarry rock or recycled concrete), substrate coverage (17%, 34%, and 67%), and presence of transplanted kelp. All eight reef designs were represented as individual 40 m x 40 m modules that were replicated in seven areas (i.e., blocks) for a total of 56 artificial reef modules totaling 22.4 acres. The Army Corps of Engineers issued its permit on August 13, 1999, and SCE completed construction of the experimental reef on September 30, 1999.

### *Monitoring of Experimental Reef*

The Commission's contract scientists produced a proposed monitoring plan for the experimental reef that was reviewed by SCE, various resource agencies and other technical specialists, and also was included in the draft PEIR for general public review. The Commission approved the proposed monitoring plan for the experimental reef on July 15, 1999.

Five years of post-construction monitoring were completed in December 2004. Results from the five-year experimental phase of the artificial reef mitigation project were quite promising in that all six artificial reef designs and all seven locations (i.e., blocks) tested showed a near equally high tendency to meet the performance standards established for the mitigation reef. It was concluded from these findings that a low relief concrete rubble or quarry rock reef constructed off the coast of San Clemente, California has a good chance of providing adequate in-kind compensation for the loss of kelp forest biota caused by the operation of SONGS Units 2 and 3.

A final report on all the findings and recommendations gleaned from the experimental phase of the artificial reef project was prepared by contract scientists and submitted to the Executive Director on August 1, 2005. These findings and recommendations formed the basis of the Executive Director's determination that (1) the mitigation reef shall be built of quarry rock or rubble concrete having dimensions and specific gravities that are within the range of the rock and concrete boulders used to construct the SONGS experimental artificial reef and (2) the percent of the bottom covered by quarry rock or rubble concrete on the mitigation reef should average at

least 42%, but no more than 86%. The Commission concurred with the Executive Director's determination for the type and percent cover of hard substrate on October 12, 2005.

### *Steps in Implementing Mitigation Reef*

In May 2006, SCE submitted its Preliminary Plan for the construction of Phase 2 of the SONGS mitigation reef. The plan calls for the addition of 127.6 acres of reef construction to the existing 22.4 acres built in September 1999 for the Phase 1 experimental reef. The project area is located offshore of San Clemente, California. (In April 2006 the State Lands Commission adopted a resolution declaring the SONGS mitigation reef to be named in honor of Dr. Wheeler North.)

The preliminary design calls for a 127.6-acre, low-profile, single-layer reef (< 1 m) constructed of quarried boulders and distributed on the benthos in quantities similar to those of the lowest substrate coverage used for the experimental reef project. The design consists of 11 polygons which vary in area from 2.4 to 37.5 acres. Four contingency polygons (22.4 acres total) also are designed as potential alternative reef construction areas.

On August 8, 2006, the Commission concurred with the Executive Director's determination that the Preliminary Reef Plan meets the requirements of the SONGS permit. SCE is currently developing the environmental analyses and final plan for the mitigation reef and expects to submit its coastal development permit application to the Commission in late Spring 2007. The Commission will hold a public hearing (probably in the Summer of 2007) to consider the final plan and coastal development permit application for the construction of the full-scale mitigation reef. The mitigation reef construction period is estimated at 100 working days.

## **FISH BEHAVIORAL MITIGATION**

### *Mitigation Requirement*

Condition B of the SONGS permit requires SCE to install and maintain behavioral barrier devices at SONGS Units 2 and 3 to reduce fish impingement losses.

### *Fish Behavioral Mitigation Compliance*

The impact studies for the operation of SONGS Units 2 and 3 conducted between 1983 and 1991 found that annual losses of juvenile and adult fish in the cooling water systems under normal operations averaged about 20 metric tons. Although the SONGS permit does not specify any criteria for evaluating the effectiveness of these devices, the Commission accepted the studies' recommendation that "the techniques" (behavioral barrier devices) "be tested on an experimental basis, and implemented if they reduce impingement by at least 2 metric tons (MT) per year", which is equivalent to at least 10% of the average loss due to impingement. (Section IV-Proposed Findings and Declarations in the SONGS 1991 permit)

SCE conducted a number of laboratory and in-plant experiments testing the behavioral response of fish to lights and sound devices from 1992 through 1999. None of the experiments showed evidence that these devices would reduce fish impingement losses as required by Condition B.

At the same time, SCE continued its modified heat cleaning treatments of the cooling water intake systems of Units 2 and 3 (called the Fish Chase procedure), which result in a considerable reduction in fish impingement.

In October 2000, the Commission reviewed the results of the experiments and concluded that no further testing of alternative behavioral barriers should be required at this time, provided that (1) SCE continues to adhere to the operating, monitoring, and reporting procedures for the modified heat cleaning treatments and (2) SCE makes every effort to test and install, if feasible, future technologies or techniques for fish protection if such techniques become accepted industry standards or are required by the Commission in other power plant regulatory actions.

The contract scientists and staff review the annual data and analyses on the fish chase procedure at SONGS. The reports indicate that the fish chase procedure generally has been consistent with the Commission's requirements. However, the Fish Chase Procedure effectiveness relative to impingement dropped below the 10% target value in both 2004 (4.82%) and 2005 (7.6%). In 2004 the mortality rates associated with the fish chase also failed to meet the standards.

SCE submitted follow-up analyses in April 2006, which indicated that there had been no changes in the procedures or operation of the fish return system or heat treatments to explain increases in fish impingement and noted that the increases in fish impingement were associated entirely with increases in the entrainment of Pacific sardines. Following review of the July 2006 report for the year 2005, on October 23, 2006 staff requested additional data and analyses in order to assess the importance of the continuing sub-standard performance of the Fish Chase Procedure. Staff has also indicated the need to initiate discussions with SCE on the possibility of implementing new technologies that could significantly reduce losses due to heat treatments and normal impingement.